

AMENDMENTS TO THE CLAIMS

In accordance with the PTO's revised amendment format, a detailed listing of all claims has been provided. A status identifier is provided for each claim in a parenthetical expression following each claim number.

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1. (Original) A node for a storage area network comprising:

at least one processor;

at least one port for connection to a storage area network

10 coupled to the at least one processor; and

a memory system coupled to the at least one processor;

wherein the memory system contains machine readable instructions comprising instructions for:

determining a status associated with the at least one port, the

15 status capable of having at least an active, a normal, a probationary, and a failed value;

when the status has a failed value, of detecting a repair associated with the at least one port and when repair is detected advancing the status to a value selected from the group consisting of active and probationary status;

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detecting when the port operates without error for a predetermined period and thereupon advancing the status from the probationary value to a value selected from the group consisting of active and normal; and

25 preferentially routing exchanges over a port of the at least one

port having a status value selected from the group of active and normal when a port having such status exists and a target node of the exchange is reachable over that port.

5 2. (Original) The node of Claim 1, wherein the port is a fibre channel N_port, L_port, or NL_port.

 3. (Original) The node of Claim 1, wherein the memory system contains machine readable instructions further comprising
10 instructions for:

 determining that a port having an associated status of probationary has encountered excessive errors, and when said excessive errors are detected for changing that status to failed.

15 4. (Original) The node of Claim 3, wherein the machine readable instructions for determining that a port having an associated status of probationary has encountered excessive errors includes instructions of ignoring errors detected within a predetermined period of time of the port seeing a network login attempt made by a second
20 node of the network.

 5. (Original) The node of Claim 4, wherein the memory system contains machine readable instructions further comprising instructions for taking laser diodes of a port of the at least one port
25 offline when status associated with that port is changed to failed, and

for placing those laser diodes online when said status is changed to a status selected from the group consisting of active, normal, and probationary.

5 6. (Original) The node of Claim 1, wherein the memory system contains machine readable instructions further comprising instructions for conducting login attempts over each port of the at least one port, for determining target nodes reachable through each port, and for recording in the memory system identities of target nodes reachable through each port.

10 7. (Original) The node of Claim 6, wherein the memory system contains machine readable instructions further comprising instructions for promoting status associated with a port from probationary to a value selected from the group consisting of normal and active when an exchange to a particular target node of the target nodes is pending and that target node is not reachable through any port already having an associated status selected from the group consisting of normal and active.

15 8. (Original) The node of Claim 6, wherein the memory system contains machine readable instructions further comprising instructions for testing a port for repair if that port has failed status, an exchange to a particular target node of the target nodes is pending, and the particular target node is not reachable through any other port

already having an associated status selected from the group consisting of probationary, normal and active.

5 9. (Original) A method for assigning exchanges to ports of a node of a storage area network, the node having at least one port for connecting the node to the storage area network, comprising the steps of:

 determining a status associated with each port of the at least one port, the status capable of having at least an active, a normal, a probationary, and a failed value;

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 when the status has a failed value, of detecting a repair associated with the associated port and when repair is detected advancing the status to a value selected from the group consisting of active and probationary status;

15 detecting when each port having probationary status operates without error for a predetermined period and thereupon advancing the status from probationary to a status selected from the group consisting of active and normal; and

 preferentially assigning exchanges to ports having a status value selected from the group of active and normal when at least one port having such status exists and a target node of the exchange is reachable over that port.

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 10. (Original) The method of Claim 9 wherein the port is a fibre channel N_port, L_port, or NL_port.

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11. (Original) The method of Claim 9, further comprising the step of:

5 determining that a port having an associated status of probationary has encountered excessive errors, and when said excessive errors are detected for changing that status to failed.

12. (Original) The method of Claim 11, wherein the step of determining that a port having an associated status of probationary
10 has encountered excessive errors ignores at least some errors detected within a predetermined period of time of the port seeing a network login attempt made by a second node of the network.

13. (Original) The method of Claim 11, further comprising
15 the steps of:

taking laser diodes of a port offline when status associated with that port is changed to failed, and for placing those laser diodes online when said status is changed to a status selected from the group consisting of active, normal, and probationary.

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14. (Original) The method of Claim 13, further comprising the steps of:

conducting login attempts over each port having online laser diodes,

25 determining target nodes reachable through each port, and

recording in the memory system identities of target nodes
reachable through each port.

5 15. (Original) The method of Claim 14, further comprising
the steps of:

 promoting status associated with a port from probationary to a
value selected from the group consisting of normal and active when
an exchange to a particular target node of the target nodes is pending
and that target node is not reachable through any port already having
10 an associated status selected from the group consisting of normal and
active.

 16. (Original) The node of Claim 15, further comprising the
step of testing a port for repair if that port has failed status, an
15 exchange to a particular target node of the target nodes is pending,
the particular target node is possibly reachable through the port
having failed status and the particular target node is not reachable
through any other port having an associated status selected from the
group consisting of probationary, normal and active.

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 17. (New) A method comprising:

 monitoring to determine a status of individual ports of a node of
a storage area network; the status comprising one of: active, normal,
probationary, or failed;

25 in an event of an individual port having a failed status,

detecting a repair of the individual port, and upon detecting the repair, advancing the status of the individual port to one of: active or probationary;

5 detecting when an individual port having a probationary status operates without error for a predetermined period and thereupon advancing the individual port from the probationary status to a status comprising: active or normal; and

10 preferentially assigning exchanges to individual ports having a status of active or normal when at least one port having such status exists and a target node of the exchange is reachable over that port.